MODULE TWELVE Case Study #3: LOW COST IFOG

LESSON ASSIGNMENT

IPPD :

Objectives:

· To

Desired Learning Outcomes: The student should be able to:

· Understand the

Assignments/References:

Chapter 12

WORKBOOK FOR MODULE TWELVE

LOW COST Interferometric Fiber Optic Gyro (IFOG)
Ms. Persis Elwood
Man Tech Program, USAF

STAGE ONE (Before Video)

Case studies presentations are provided to illustrate a number of points made throughout the course work. Programs are indeed using the tools of integrated Product and Process Development to insure lower costs and a lower risk transition to manufacturing. In Dr. Schrage's presentation, he indicates that the Manufacturing Technology Program is one of the "risk mitigator" programs available to insure a smoother transition from design to manufacturing. The Interferometric Fiber Optic Gyroscope (IFOG) presented by Ms. Persis Elwood, is a project that provides a good example of how the principles of IPPD were put into play early on in a technology insertion program.

Before viewing the video tape review your notes on the Quality Function Deployment module presented by Mr. Mark Gordon. Compare your exercise answers to Ms. Elwoods QFD matrix provided in the text. Note the similarities, differences. Were there any novel approaches to the QFD she presents?

Note also her reference to the "process capabilities" that were predicted by using Cp - Cpk planning and tracking. Try to fit the same thought process to your project or to a similar type situation.

STAGE TWO (End of Video)

Q1. Explain the term "Pareto Analysis" that Ms. Elwood uses.

Q2. What was the chief "driver" in the IFOG program, and the overall program goal?

Q3. What was the reason for the Industrial Review Board in the IFOG program?

Q4. How did they optimize their manufacturing program line?

Answers To Module Twelve

CASE STUDY: LOW COST IFOG

Q1. Explain the term “Pareto Analysis” that Ms. Elwood uses?

A1 Pareto Analysis theorem suggests that 20% of all sources cause 80% of the problem. This is also commonly called the 80-20 rule.

Q2. What was the chief “driver” in the IFOG program, and the overall program goal?

A2. Cost, $6000 per axis cost to $500 per axis

Q3. What was the reason for the Industrial Review Board in the IFOG program?

A3. The chief reason for the industry review board was to transfer technology to the corporate community in realtime, and to drive the program with industry inputs.

Q4. How did they optimize their manufacturing program line .

A4. Design of Experiments, by allowing the DOE to set the process limits of the manufacturing line, then setting SPC limits to control.